



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-0976; Project Identifier AD-2022-00722-T; Amendment 39-22130; AD 2022-16-01]**

**RIN 2120-AA64**

**Airworthiness Directives; Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica S.A.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is superseding Airworthiness Directive (AD) 2022-08-07, which applied to all Embraer S.A. Model ERJ 170-100 STD, -100 LR, -100 SU, and -100 SE airplanes; Model ERJ 170-200 STD, -200 LR, and -200 SU airplanes; Model ERJ 190-100 STD, -100 LR, -100 IGW, and -100 ECJ airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes. AD 2022-08-07 required determining if certain NORDAM passenger windows are installed, inspecting affected parts for cracks, and replacing cracked parts. AD 2022-08-07 also required repetitive inspections of uncracked affected parts until all affected parts are replaced. This AD was prompted by a determination that additional airplanes are affected by the unsafe condition identified in AD 2022-08-07. This AD retains certain requirements of AD 2022-08-07, revises the applicability of AD 2022-08-07 to include the affected parts for clarification, and adds a certain airplane model to the applicability. This AD also prohibits the installation of affected parts. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

#### **Examining the AD Docket**

You may examine the AD docket at [www.regulations.gov](http://www.regulations.gov) by searching for and locating Docket No. FAA-2022-0976; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for the Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Jacob Fitch, Aerospace Engineer, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-4130; email [jacob.fitch@faa.gov](mailto:jacob.fitch@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Background**

The FAA issued AD 2022-08-07, Amendment 39-22010 (87 FR 21003, April 11, 2022) (AD 2022-08-07), for all Embraer S.A. Model ERJ 170-100 STD, -100 LR, -100 SU, and -100 SE airplanes; Model ERJ 170-200 STD, -200 LR, and -200 SU airplanes; Model ERJ 190-100 STD, -100 LR, -100 IGW, and -100 ECJ airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes. AD 2022-08-07 required determining if certain NORDAM passenger windows are installed (i.e., windows having parts manufacturer approval (PMA) part number (P/N) NP00038-3), inspecting affected parts for cracks, and replacing cracked parts. AD 2022-08-07 also required repetitive inspections of uncracked affected parts until all affected parts are replaced. AD 2022-08-07 also prohibited the installation of affected parts. AD 2022-08-07 was prompted by a report of the failure of the inner pane of the passenger window to meet maximum operating pressure and lack of fail-safe design. The FAA issued AD 2022-08-07 to address this condition, which could result in possible serious injury to a passenger near the window due to rapid decompression, and consequent reduced ability of the flightcrew to maintain the safe flight and landing of the airplane.

### **Actions Since AD 2022-08-07 Was Issued**

Since the FAA issued AD 2022-08-07, the agency has determined that Model ERJ 170-200 LL airplanes are also affected by the identified unsafe condition. For Model ERJ 170-200 LR airplanes that were converted to Model ERJ 170-200 LL airplanes, the affected parts could be installed on one of the converted airplanes. The FAA also determined that, for clarity, the applicability of AD 2022-08-07 must be revised to include the affected parts.

## **Comments on AD 2022-08-07**

The FAA issued AD 2022-08-07 as a final rule; request for comments. The FAA received a comment from Aerolitoral, S.A. de C.V. (Aeromexico Connect) who expressed support for AD 2022-08-07. The FAA received additional comments from five commenters, including Agência Nacional de Aviação Civil (ANAC), Embraer, Myanmar Airways International, Servicio Aéreo a Territorios Nacionales (SATENA), and Ukraine International Airlines. The FAA determined that certain comments contained information to warrant changes to AD 2022-08-07. The following presents the comments received on AD 2022-08-07 and the FAA's response to each comment.

### **Request to Revise Applicability**

Embraer requested that the FAA revise the applicability in paragraph (c) of AD 2022-08-07 to specify that the AD applies to NORDAM passenger windows having PMA P/N NP00038-3 and that the part could be installed on the airplanes identified in paragraphs (c)(1) through (4) of AD 2022-08-07. Embraer stated that the applicability of AD 2022-08-07 specifies that certain airplanes are affected; however, Embraer noted the AD should specify it is applicable to the PMA passenger windows. Embraer stated the applicability is generating questions and doubts from operators and local authorities in countries where PMA part numbers are not approved by local regulators. Embraer noted it is unable to define if the AD is applicable or not to specific operators as it depends on the local aircraft civil operations rules.

ANAC, which is the aviation authority for Brazil, also requested that the FAA revise the applicability to make it clear the AD is component-level AD and not an airplane-level AD. ANAC stated that if the affected parts can be used on any airplane registered outside of the U.S., it is concerned that other countries may not follow the AD, as the FAA is not the State of Design Authority for the airplanes.

The FAA agrees to revise the applicability and has revised paragraph (c) of this AD to specify this AD applies to airplanes equipped with NORDAM passenger windows having PMA P/N NP00038-3. As noted, the FAA is not the State of Design Authority for Embraer airplanes. However, the FAA is responsible for the affected PMA part. The change to the applicability clarifies this AD is applicable to the affected PMA parts, which are only installed on the Embraer airplanes identified in the applicability. The change to the applicability does not change how the unsafe condition is addressed. All affected PMA parts must be inspected and replaced as required by this AD.

#### **Request to Clarify Affected Parts**

Embraer requested that the FAA clarify paragraph (g) of AD 2022-08-07 to specify that the affected part is a PMA part. Embraer stated that NORDAM P/N NP00038-3 is a PMA part number that is not part of the Embraer type design since it is an FAA-approved PMA part number.

The FAA agrees to clarify that the affected parts are PMA parts and has revised paragraphs (g) and (j) of this AD accordingly. The FAA also notes that the NORDAM PMA part number is distinct from the original equipment manufacturer (Embraer) part number and has added Note 1 to paragraph (c) of this AD to clarify that the Embraer part number is not affected by this AD.

#### **Request to Clarify Part Number**

Ukraine International Airlines and SATENA requested that the FAA clarify the affected part number. The commenters stated that the illustrated parts catalog (IPC) for Embraer 190 does not mention the part number specified in AD 2022-08-07. Ukraine International Airlines stated the IPC lists a “TRANSPARENCY, PAX WINDOW” having P/N P00038-3 only (without the letter “N” before the number).

The FAA agrees to clarify. NORDAM manufactures P/N NP00038-3 as a PMA replacement part for the original equipment manufacturer (Embraer) P/N P00038-3. As

specified in paragraph (c) of this AD, this AD only applies to the NORDAM PMA part number, not the original Embraer part number.

### **Request for Contact Information**

Myanmar Airways International requested that the FAA provide contact information for the NORDAM Alert Service Bulletin ERJ 56-A01, dated January 18, 2022, referenced in AD 2022-08-07. The commenter noted that the NORDAM Alert Service Bulletin ERJ 56-A01, dated January 18, 2022, is referred to as guidance for accomplishing the actions.

The FAA agrees for the reasons provided. The FAA has included contact information for obtaining a copy of NORDAM Alert Service Bulletin ERJ 56-A01, dated January 18, 2022, in paragraph (o)(2) of this AD.

### **FAA's Determination**

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **AD Requirements**

This AD requires repetitive inspections of NORDAM passenger windows having PMA P/N NP00038-3 for cracks, replacement of cracked windows, and eventual replacement of all PMA P/N NP00038-3 windows. This AD also prohibits the installation of PMA P/N NP00038-3 windows.

### **Justification for Immediate Adoption and Determination of the Effective Date**

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment

prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies forgoing notice and comment prior to adoption of this rule because due to the lack of a fail-safe design and failure of the window's inner pane to meet maximum operating pressure, a complete failure of the outer window pane could result in possible serious injury to a passenger near the window due to rapid decompression, and consequent reduced ability of the flightcrew to maintain the safe flight and landing of the airplane. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

### **Comments Invited**

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2022-0976 and Project Identifier AD-2022-00722-T" at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to [www.regulations.gov](http://www.regulations.gov), including any personal

information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

### **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Jacob Fitch, Aerospace Engineer, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-4130; email [jacob.fitch@faa.gov](mailto:jacob.fitch@faa.gov). Any commentary that the FAA receives that is not specifically designated as CBI will be placed in the public docket for this rulemaking.

### **Regulatory Flexibility Act**

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

### **Costs of Compliance**

The FAA estimates that this AD affects 65 airplanes of U.S. registry (only a total of 65 affected parts were produced). The FAA estimates the following costs to comply with this AD:



### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Repetitive inspections for cracking (retained action from AD 2022-08-07)	Up to 1 work-hour X \$85 per hour = \$85 per inspection cycle	\$0	\$85 per inspection cycle	Up to \$5,525 per inspection cycle
Replacement (retained action from AD 2022-08-07)	2 work-hours X \$85 per hour = \$170	\$500	\$670	Up to \$43,550
Repetitive inspections for cracking (new action for added airplane model)	Up to 1 work-hour X \$85 per hour = \$85 per inspection cycle	\$0	\$85 per inspection cycle	Up to \$5,525 per inspection cycle
Replacement (new action for added airplane model)	2 work-hours X \$85 per hour = \$170	\$500	\$670	Up to \$43,550

The FAA estimates the following costs to do any necessary actions that would be required based on the results of the inspections. The FAA has no way of determining the number of aircraft that might need these actions:

### On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement	2 work-hours X \$85 per hour = \$170	\$500	\$670

The FAA has included all known costs in its cost estimate. According to the parts manufacturer, however, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

## **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

## **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive (AD) 2022-08-07, Amendment 39-22010

(87 FR 21003, April 11, 2022); and

b. Adding the following new AD:

**2022-16-01 Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria**

**Aeronáutica S.A.):** Amendment 39-22130; Docket No. FAA-2022-0976; Project

Identifier AD-2022-00722-T.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD replaces AD 2022-08-07, Amendment 39-22010 (87 FR 21003, April 11, 2022) (AD 2022-08-07).

#### **(c) Applicability**

This AD applies to all Embraer S.A. airplanes identified in paragraphs (c)(1) through (4) of this AD, certificated in any category; equipped with any NORDAM passenger window having parts manufacturer approval (PMA) part number (P/N) NP00038-3.

Note 1 to the introductory text of paragraph (c): PMA P/N NP00038-3 is approved for type design (Embraer) P/N P00038-3. Only PMA P/N NP00038-3 is affected by this AD.

- (1) Model ERJ 170-100 STD, -100 LR, -100 SU, and -100 SE airplanes.
- (2) Model ERJ 170-200 STD, -200 LR, -200 SU, and -200 LL airplanes.
- (3) Model ERJ 190-100 STD, -100 LR, -100 IGW, and -100 ECJ airplanes.
- (4) Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes.

**(d) Subject**

Air Transport Association (ATA) of America Code 56, Windows.

**(e) Unsafe Condition**

This AD was prompted by a report of the failure of the inner pane of the passenger window to meet maximum operating pressure and lack of fail-safe design, and by a determination that additional airplanes are affected by the unsafe condition identified in AD 2022-08-07. The FAA is issuing this AD to address this condition, which could result in possible serious injury to a passenger near the window due to rapid decompression, and consequent reduced ability of the flightcrew to maintain the safe flight and landing of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Retained Definition of Affected Parts with a Clarification that the Affected Parts are PMA Parts**

This paragraph restates the definition specified in paragraph (g) of AD 2022-08-07, with a clarification that the affected parts are PMA parts. For the purposes of this AD, affected parts are NORDAM passenger windows having PMA part number (P/N) NP00038-3.

**(h) Retained Inspections and Replacement with Added Reference to Affected Parts in Paragraph (h)(1) of this AD**

This paragraph restates the requirements of paragraphs (h)(1) and (2) of AD 2022-08-07, with added reference to affected parts in paragraph (h)(1) of this AD. For all

airplanes except Model ERJ 170-200 LL airplanes, comply with the actions required by paragraphs (h)(1) and (2) of this AD.

(1) Before further flight, do a visual inspection of the outer window pane of the affected parts for cracking, and do the applicable action specified in paragraph (h)(1)(i) or (ii) of this AD.

(i) If any cracking is found, before further flight, replace the affected part with a serviceable window.

(ii) If no cracking is found, repeat the inspection thereafter before each flight, until the affected part is replaced, as specified in paragraph (h)(2) of this AD.

(2) Within 90 days after April 26, 2022 (the effective date AD 2022-08-07):  
Replace all affected parts installed on the airplane with serviceable windows.

Note 2 to paragraph (h): Guidance for the actions required by paragraph (h) of this AD can be found in NORDAM Alert Service Bulletin ERJ 56-A01, dated January 18, 2022.

**(i) Retained Terminating Action for Repetitive Inspections Required by Paragraph (h)(1)(ii) of this AD with No Changes**

This paragraph restates the terminating action specified in paragraph (i) of AD 2022-08-07, with no changes. Replacement of an affected part, as specified in paragraph (h)(2) of this AD, terminates the repetitive inspection requirements specified in paragraph (h)(1)(ii) of this AD for that part.

**(j) Retained Parts Installation Prohibition with a Clarification that the Affected Parts are PMA Parts**

This paragraph restates the parts installation prohibition specified in paragraph (j) of AD 2022-08-07, with a clarification that the affected parts are PMA parts. For all airplanes except Model ERJ 170-200 LL airplanes: As of April 26, 2022 (the effective date AD 2022-08-07), no person may install a NORDAM passenger window, PMA P/N NP00038-3, on any airplane.

**(k) New Inspections and Replacement for Certain Airplanes**

For Model ERJ 170-200 LL airplanes: Comply with the actions required by paragraphs (k)(1) and (2) of this AD.

(1) Before further flight, do a visual inspection of the outer window pane of the affected parts for cracking, and do the applicable action specified in paragraph (k)(1)(i) or (ii) of this AD.

(i) If any cracking is found, before further flight, replace the affected part with a serviceable window.

(ii) If no cracking is found, repeat the inspection thereafter before each flight, until the affected part is replaced, as specified in paragraph (k)(2) of this AD.

(2) Within 90 days after the effective date of this AD: Replace all affected parts installed on the airplane with serviceable windows.

Note 3 to paragraph (k): Guidance for the actions required by paragraph (k) of this AD can be found in NORDAM Alert Service Bulletin ERJ 56-A01, dated January 18, 2022.

**(l) Terminating Action for Repetitive Inspections Required by Paragraph (k)(1)(ii) of this AD**

Replacement of an affected part, as specified in paragraph (k)(2) of this AD, terminates the repetitive inspection requirements specified in paragraph (k)(1)(ii) of this AD for that part.

**(m) New Parts Installation Prohibition for Certain Airplanes**

For Model ERJ 170-200 LL airplanes: As of the effective date of this AD, no person may install a NORDAM passenger window, PMA P/N NP00038-3, on any airplane.

**(n) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Large Aircraft Section, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found

in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the Large Aircraft Section, International Validation Branch, send it to the attention of the person identified in paragraph (o)(1) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

**(o) Related Information**

(1) For more information about this AD, contact Jacob Fitch, Aerospace Engineer, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-4130; email jacob.fitch@faa.gov.

(2) For service information identified in this AD that is not incorporated by reference, contact The NORDAM Group LLC, Transparency Division, 7018 North Lakewood Ave., Tulsa, OK 74117; email John Clawson, Vice President Engineering and Program Management, NORDAM Corporate Division, at jclawson@nordam.com; internet <https://nordam.com>.

**(p) Material Incorporated by Reference**

None.

Issued on July 21, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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